

CLAIMS

1. In a telecommunications network comprising an optical fibre cable (2, 20, 200), and an optical component (3, 30, 300) connected to a first point (4, 40) of the optical fibre cable, with an optical time domain reflectometer (OTDR) connected to a second point (6, 60, 600) of the optical fibre cable so that it can emit OTDR signals along the optical fibre cable towards the optical component, a method of preventing OTDR signals from being applied to the optical component, comprising
introducing one or more optical signals into the optical fibre cable at the first point thereof,
using the optical fibre cable to carry the optical signals to the second point thereof, and
configuring the OTDR to detect the or each optical signal from the optical fibre cable and to prevent emission of ODTR signals at any time during which detection of an optical signal occurs.
2. A method according to claim 1, in which the optical component comprises an optical receiver, and introducing one or more optical signals into the optical fibre cable at the first point thereof comprises arranging the optical receiver to introduce one or more optical signals into the optical fibre cable.
3. A method according to claim 2, in which arranging the optical receiver to introduce one or more optical signals into the optical fibre cable is achieved by

providing the optical receiver with a transmitting device, and transmitting one or more optical signals from the transmitting device into the optical fibre cable.

4. A method according to any preceding claim, in which the optical component comprises a receive erbium doped fibre amplifier (EDFA), and introducing one or more optical signals into the optical fibre cable at the first point thereof comprises arranging the receive EDFA to introduce one or more optical signals into the optical fibre cable.
5. A method according to claim 4, in which arranging the receive EDFA to introduce one or more optical signals into the optical fibre cable is achieved by controlling the isolation of an input isolator of the receive EDFA such that, in the absence of an input signal thereto, one or more optical signals in the form of ASE noise escapes from the input of the receive EDFA and is introduced into the optical fibre cable.
6. A method according to claim 1, in which introducing one or more optical signals into the optical fibre cable at the first point thereof comprises superimposing one or more optical signals onto the optical fibre cable.
7. A method according to claim 6, in which superimposing one or more optical signals onto the optical fibre cable is achieved by multiplexing one or more optical signals onto the optical fibre cable.

8. A method according to claim 7, in which the or each optical signal comprises a pilot signal, and the or each pilot signal has a wavelength different to that of traffic signals which would normally be transmitted along the optical fibre cable.
9. A method according to claim 1, in which introducing one or more optical signals into the optical fibre cable at the first point thereof comprises superimposing one or more optical service channel (OSC) optical signals onto the optical fibre cable.
10. A method according to claim 9, in which superimposing one or more OSC optical signals onto the optical fibre cable is achieved by multiplexing one or more OSC optical signals onto the optical fibre cable.
11. A method according to any preceding claim, in which the OTDR comprises a transmitter, used to emit OTDR signals.
12. A method according to claim 11, in which the OTDR transmitter is disabled to prevent emission of ODTR signals at any time during which detection of an optical signal occurs.
13. A method according to any preceding claim, in which the OTDR comprises a detector, used to detect the or each optical signal from the optical fibre cable.

14. A method according to claim 13, in which the OTDR detector is able to detect optical signals in a wavelength range of approximately 1250nm to approximately 1700nm.
15. A method according to claim 13 or claim 14, in which the OTDR detector is used to receive echoes of OTDR signals.
16. A method according to any of claims 1 to 12, in which the OTDR comprises a receiver used to receive echoes of OTDR signals.